De Mundi Systemate

erit partium $1216373\frac{1}{2}$, & ſingulis horis area illa erit partium $50682\frac{1}{4}$. Sin latus rectum majus ſit vel minus in ratione quavis, erit area diurna & horaria major vel minor in eadem ratione ſubduplicata.

LEMMA V.

Invenire lineam curvam generis parabolici, quæ per data quotcunque puncta tranſibit.

Sunto puncta illa A, B, C, D, E, F, &c. & ab iiſdem ad rectam quamvis poſitione datam HN demitte perpendicula quotcunque AH, BI, CK, DL, EM, FN.

Caſ. 1. Si punctorum H, I, K, L, M, N æqualia ſunt intervalla HI, IK, KL, &c. collige perpendiculorum AH, BI, CK, &c. differentias primas $b, 2b, 3b, 4b, 5b$, &c. ſecundas $c, 2c, 3c, 4c$, &c. tertias $d, 2d, 3d$, &c. id eſt, ita ut ſit $AH-BI=b$, $BI-CK=2b$, $CK-DL=3b$, $DL+EM=4b$, $-EM+FN=5b$, &c. dein $b-$

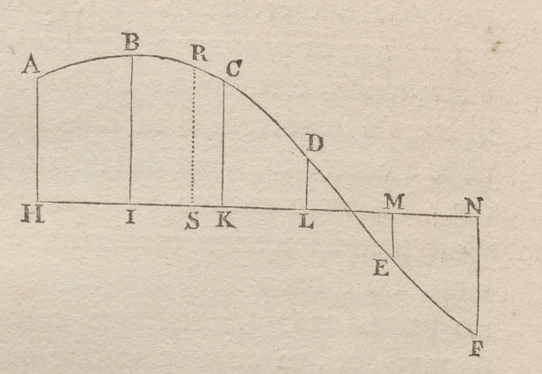
b 2b 3b 4b 5b

c 2c 3c 4c

d 2d 3d

e 2e

f



$2b=c$, &c. & ſic pergatur ad differentiam ultimam, quæ hic eſt f. Deinde erecta quacunque perpendiculari RS, quæ fuerit ordinatim applicata ad curvam quæſitam: ut inveniatur hujus longitudo, pone intervalla HI, IK, KL, LM, &c. unitates eſſe, & dic $AH=a$, $-HS=p$, $\frac{1}{2}p$ in $-IS=q$, $\frac{1}{3}q$ in $+SK=r$, $\frac{1}{4}r$ in $+SL=s$, $\frac{1}{5}s$ in $+SM=t$; pergendo videlicet ad uſque penultimum perpendiculum ME, & præponendo ſigna negativa terminis HS, IS, &c. qui

jacent

Liber Tertius.

jacent ad partes puncti S verſus A, & ſigna affirmativa terminis SK, SL, &c. qui jacent ad alteras partes puncti S. Et ſignis probe obſervatis, erit $RS=a+bp+cq+dr+es+ft$, &c.

Caſ. 2. Quod ſi punctorum H, I, K, L, &c. inæqualia ſint intervalla HI, IK, &c. collige perpendiculorum AH, BI, CK, &c. differentias primas per intervalla perpendiculorum diviſas $b, 2b, 3b, 4b, 5b$; ſecundas per intervalla bina diviſa $c, 2c, 3c, 4c$, &c. tertias per intervalla terna diviſas $d, 2d, 3d$, &c. quartas per intervalla quaterna diviſas $e, 2e$, &c. & ſic deinceps; id eſt, ita ut ſit $b=\frac{AH-BI}{HI}$, $2b=\frac{BI-CK}{IK}$, $3b=\frac{CK-DL}{KL}$, &c. dein $c=\frac{b-2b}{HK}$, $2c=\frac{2b-3b}{IL}$, $3c=\frac{3b-4b}{KM}$, &c. poſtea $d=\frac{c-2c}{HL}$, $2d=\frac{2c-3c}{IM}$, &c. Inventis differentiis, dic $AH=a$, $-HS=p$, p in $-IS=q$, q in $+SK=r$, r in $+SL=s$, s in $+SM=t$; pergendo ſcilicet ad uſque perpendiculum penultimum ME, & erit ordinatim applicata $RS=a+bp+cq+dr+es+ft$, &c.

Corol. Hinc areæ curvarum omnium inveniri poſſunt quamproxime. Nam ſi curvæ cujuſvis quadrandæ inveniantur puncta aliquot, & parabola per eadem duci intelligatur: erit area parabolæ hujus eadem quamproxime cum area curvæ illius quadrandæ. Poteſt autem parabola per methodos notiſſimas ſemper quadrari Geometrice.

LEMMA VI.

Ex obſervatis aliquot locis cometæ invenire locum ejus ad tempus quodvis intermedium datum.

Deſignent HI, IK, KL, LM tempora inter obſervationes (*in fig. præced.*) HA, IB, KC, LD, ME obſervatas quinque longitudines cometæ, HS tempus datum inter obſervationem primam & longitudinem quæſitam. Et ſi per puncta A, B, C, D, E duci intelligatur curva regularis $ABCDE$; & per lemma ſuperius inveniatur ejus ordinatim applicata RS, erit RS longitudo quæſita.

Eadem methodo ex obſervatis quinque latitudinibus invenitur latitudo ad tempus datum.

Si